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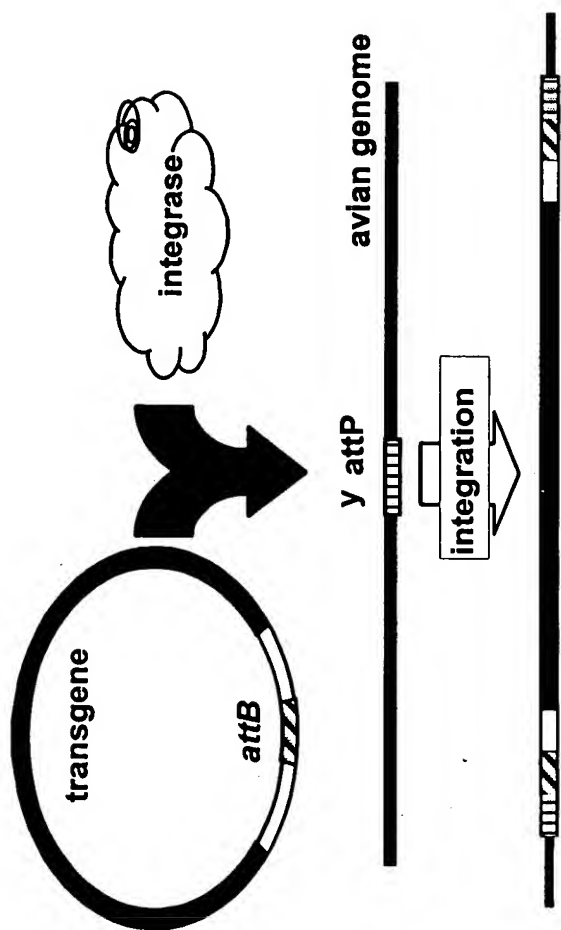


Fig. 1

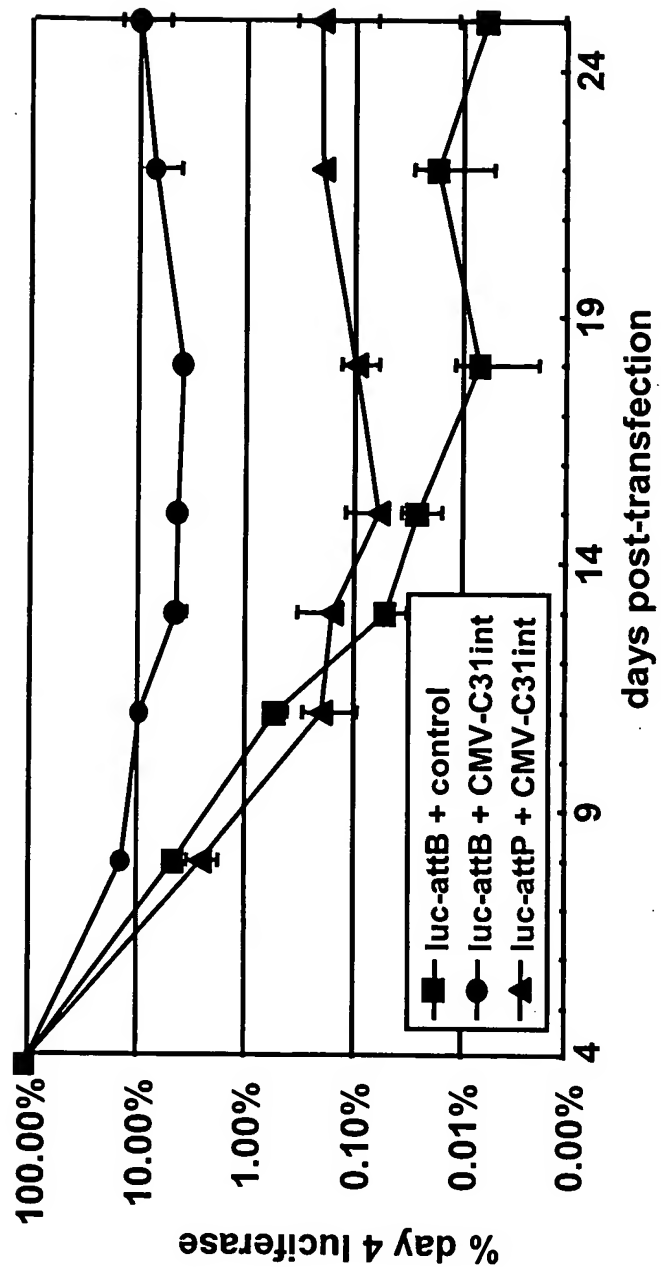


Fig. 2

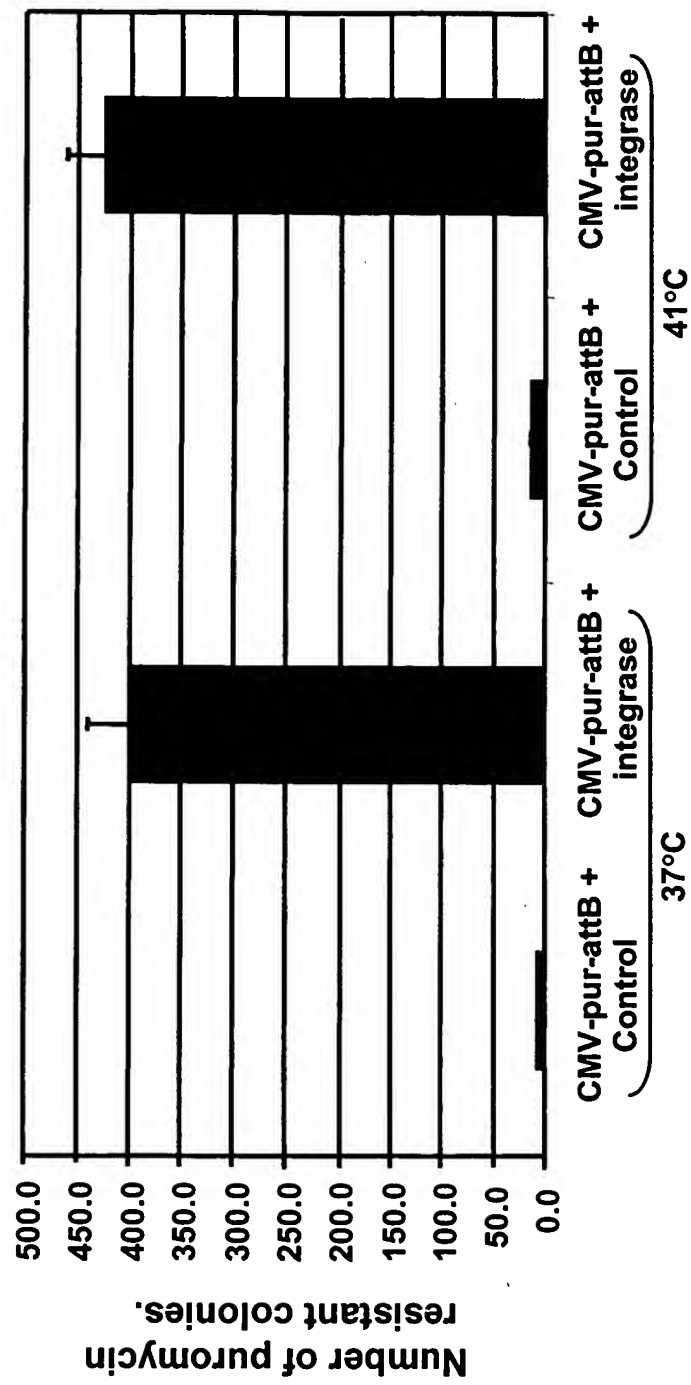


Fig. 3

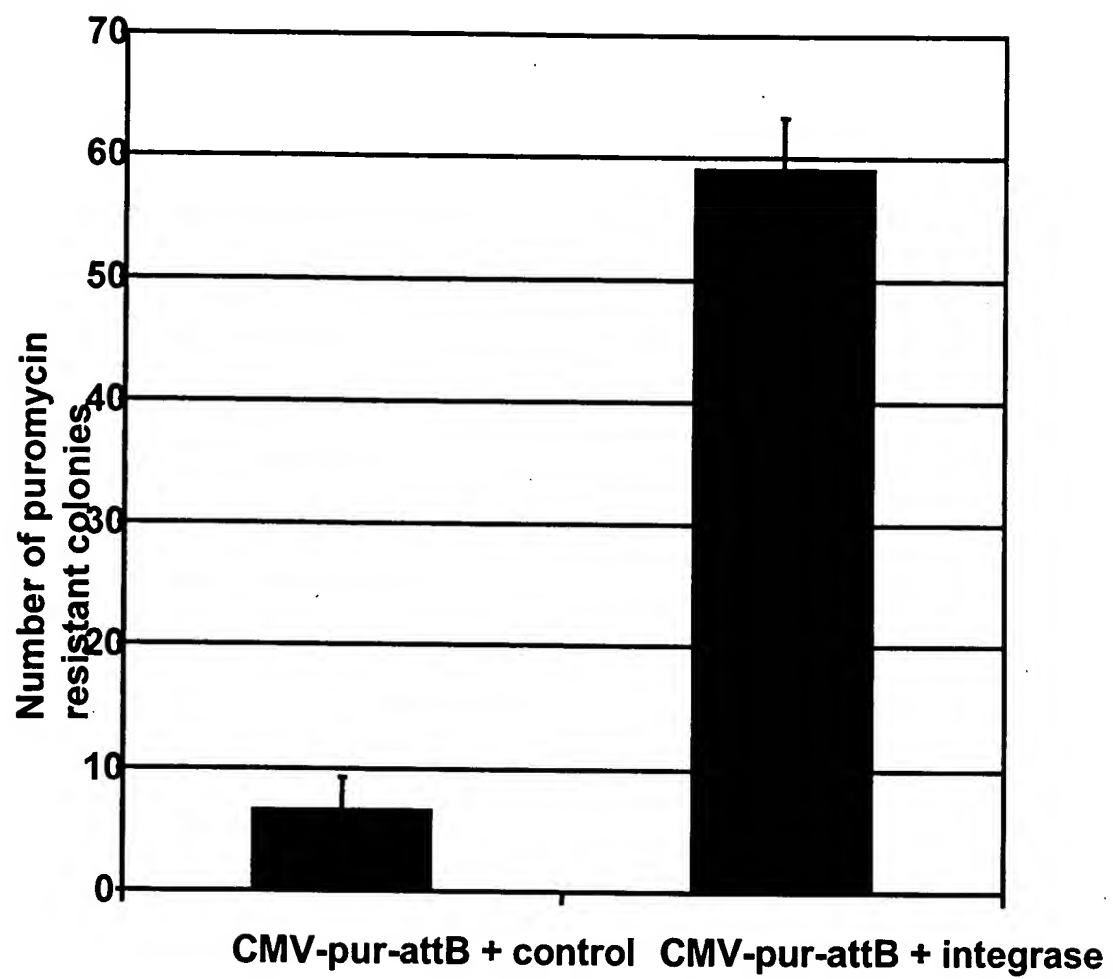


Fig. 4

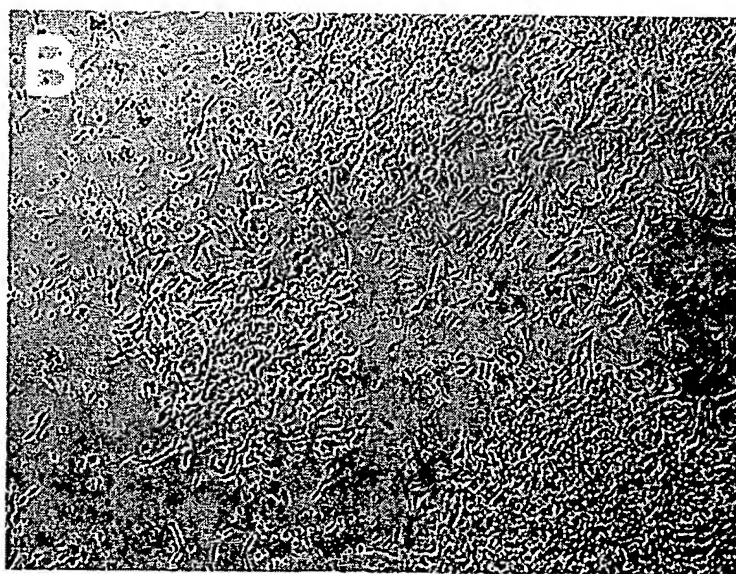
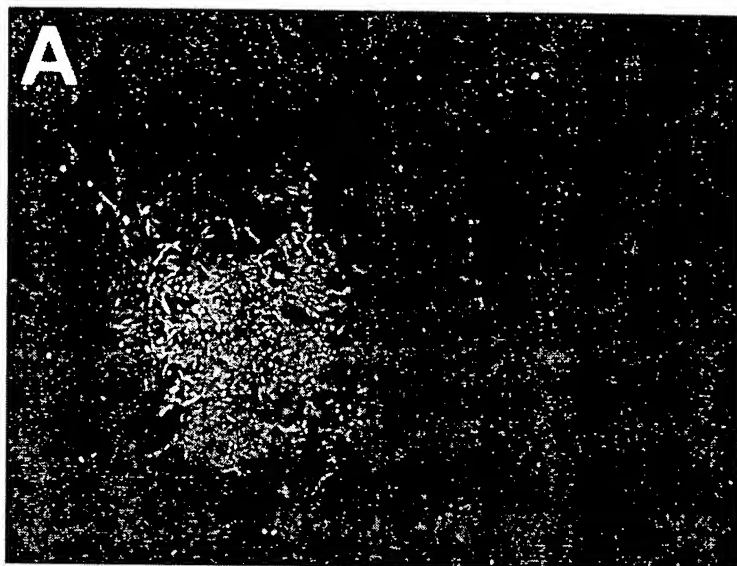


Fig. 5

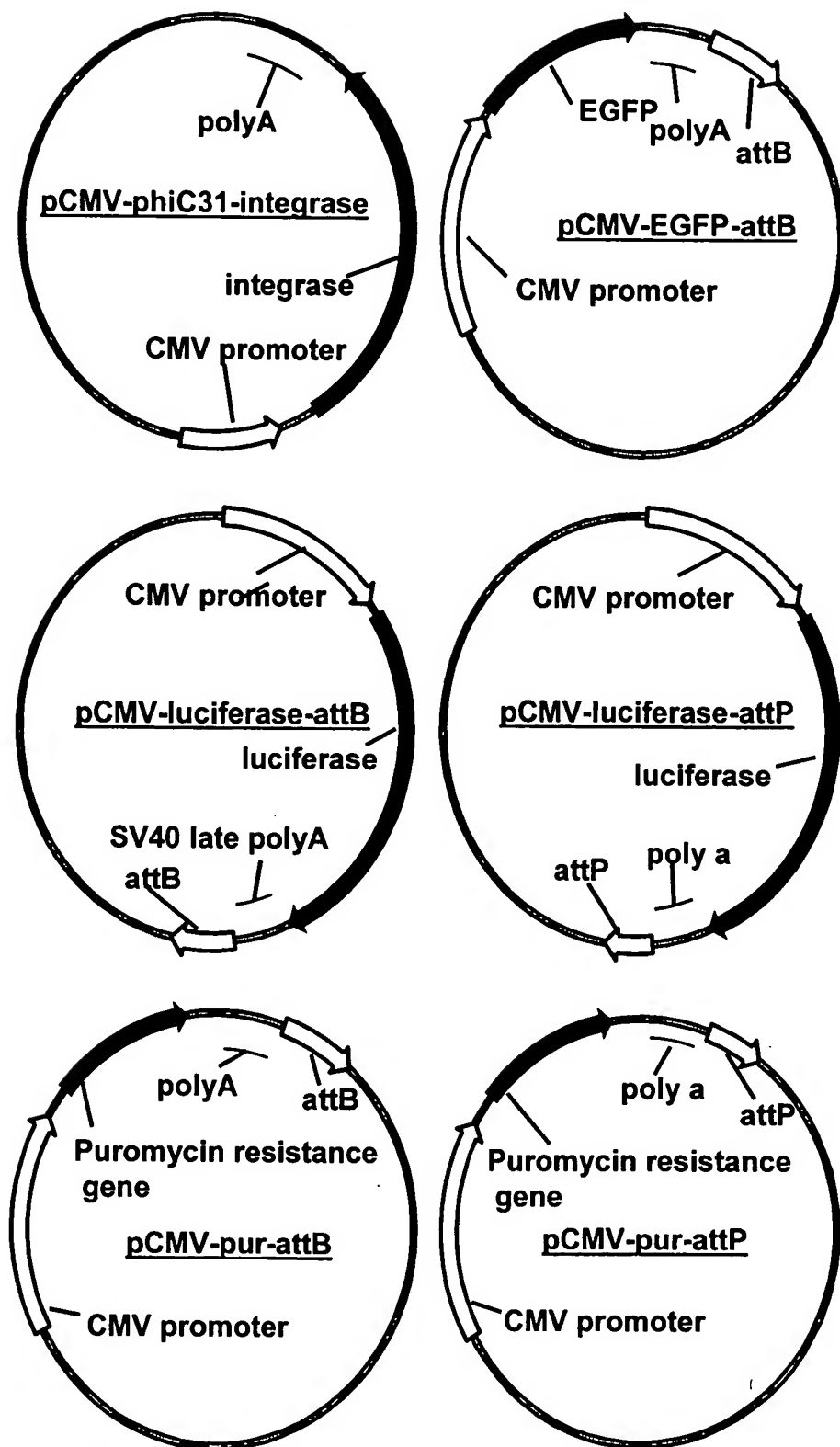
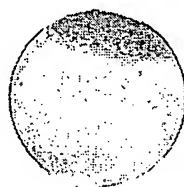


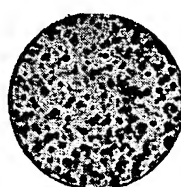
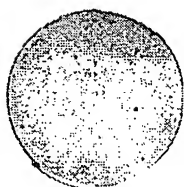
Fig. 6

- integrase

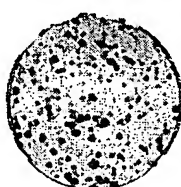
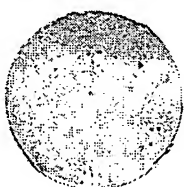
+integrase



pCMV-pur-attB



p-12.0-lys-LSPIFNMM-cmv-pur-attB



10 kb OM IFN-Ins-CMV-pur-attB

Fig. 7

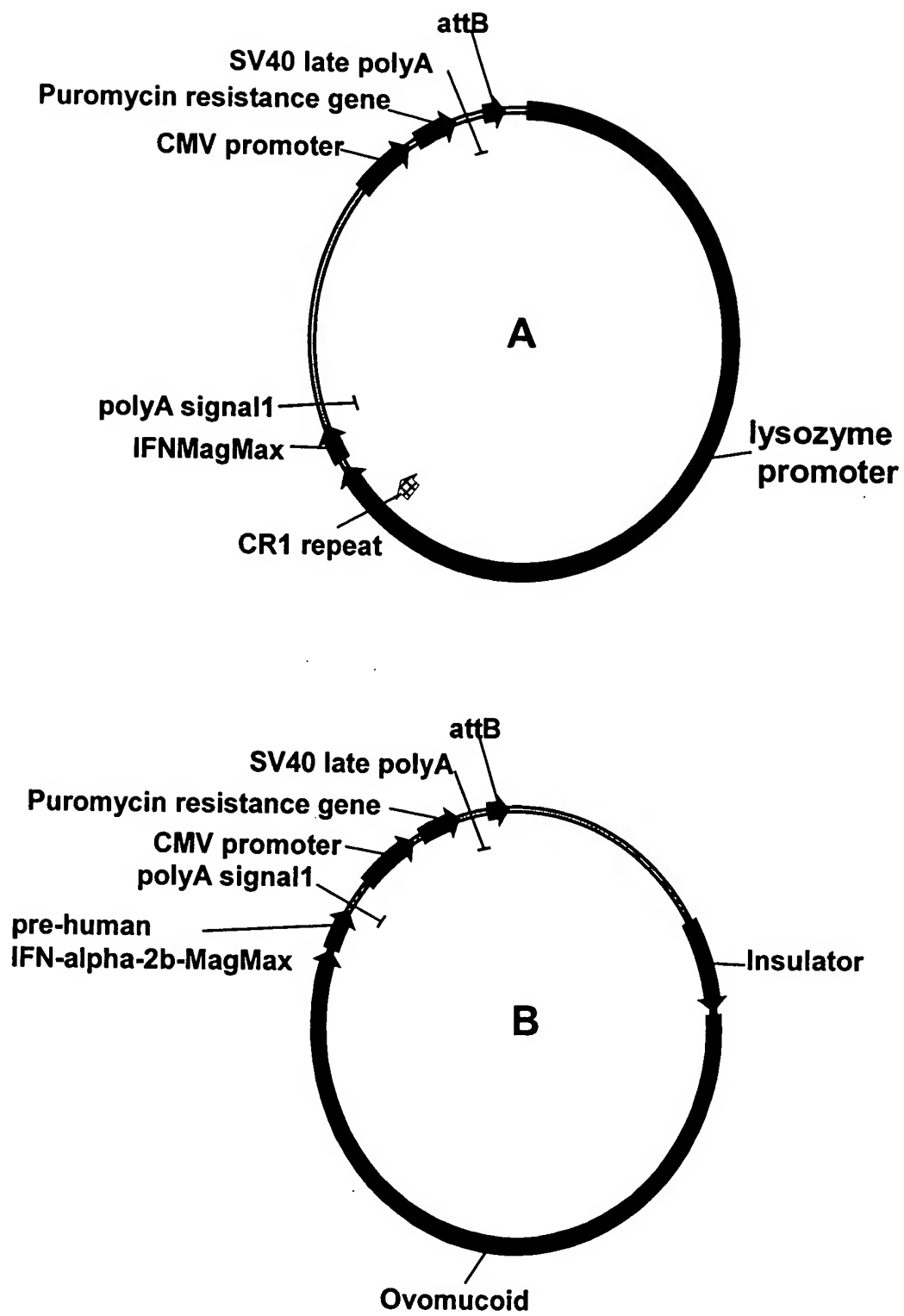


Fig. 8

pCMV-C31int (SEQ ID NO: 1)

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Fig. 9

pCMV-luc-attB (SEQ ID NO: 2)

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Fig. 10

pCMV-luc-attP (SEQ ID NO: 3)

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TGTGCCAGAGTCCTTCGATAGGGACAAGACAATTGCACTGATCATGAACCTCTCTGGATCTA
CTGGTCTGCCTAAAGGTGTGCTCTGCCTCATAGAAGTGCCTGCGTGAGATTCTCGCATGCC
AGAGATCCTATTTTTGGCAATCAAATCATTCCGGATACTGCGATTTTAAGTGTGTTCATT
CCATCACGGTTTTTGAATGTTTACTACACTCGGATATTTGATATGTGGATTTTCAGTCTGTCT
TAATGTATAGATTTGAAGAAGAGCTGTTTCTGAGGAGCCTTCAGGATTACAAGATTCAAAGT
GCGCTGCTGGTGCCAACCCTATTCTCCTTCTTCGCCAAAAGCACTCTGATTGACAAATACGA
TTTATCTAATTTACACGAAATTGCTTCTGGTGGCGCTCCCCTCTCTAAGGAAGTCGGGGAAG
CGGTTGCCAAGAGGTTCCATCTGCCAGGTATCAGGCAAGGATATGGGCTCACTGAGACTACA
TCAGCTATTCTGATTACACCCGAGGGGGATGATAAACCGGGCGCGGTCGGTAAAGTTGTTCC
ATTTTTTGAAGCGAAGGTTGTGGATCTGGATACCGGGAAAACGCTGGGCGTTAATCAAAGAG
GCGAACTGTGTGTGAGAGGTCTATGATTATGTCCGGTTATGTAAACAATCCGGAAGCGACC
AACGCCTTGATTGACAAGGATGGATGGCTACATTCTGGAGACATAGCTTACTGGGACGAAGA
CGAACACTTCTTCATCGTTGACCGCCTGAAGTCTCTGATTAAGTACAAAGGCTATCAGGTGG
CTCCCGCTGAATTGGAATCCATCTTGCTCCAACACCCCAACATCTTCGACGCAGGTGTGCGA
GGTCTTCCCGACGATGACGCCGGTGAACCTCCCGCCGCCGTTGTTGTTTTGGAGCACGGAAA
GACGATGACGGAAAAAGAGATCGTGGATTACGTCGCCAGTCAAGTAACAACCGCGAAAAAGT
TGCGCGGAGGAGTTGTTTGTGGACGAAGTACCGAAAGGTCTTACCGGAAAACCTCGACGCA
AGAAAAATCAGAGAGATCCTCATAAAGGCCAAGAAGGGCGGAAAGATCGCCGTGTAATTCTA
GAGTCGGGGCGGCCGCGCTTCGAGCAGACATGATAAGATACATTGATGAGTTTGGACAAA
CCACAAC TAGAATGCAGTGAAAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCTTTA
TTTGTAACCATTATAAGCTGCAATAAACAAGTTAACAACAACAATTGCATTCATTTTATGTT
TCAGGTT CAGGGGGAGGTGTGGGAGGTTTTTTAAAGCAAGTAAAACCTCTACAAATGTGGTA
AAATCGATAAGGATCAATTCCGGCTTCGACTAGTACTGACGGACACACCGAAGCCCCGGCGGC
AACCTCAGCGGATGCCCCGGGGCTTCACGTTTTCCAGGTCAGAAGCGGTTTTTCGGGAGTA
GTGCCCCAACTGGGGTAACCTTTGAGTTCTCTCAGTTGGGGGCGTAGGGTCGCCGACATGAC
ACAAGGGGTTGTGACCGGGGTGGACACGTACGCGGGTGCTTACGACCGTCAGTCGCGCGAGC
GCGACTAGTACAAGCCGAATTGATCCGTCGACCGATGCCCTTGAGAGCCTTCAACCCAGTCA
GCTCCTTCCGGTGGGCGCGGGGCATGACTATCGTCGCGCACTTATGACTGTCTTCTTTATC
ATGCAACTCGTAGGACAGGTGCCGGCAGCGCTCTTCCGCTTCTCGCTCACTGACTCGCTGC

GCTCGGTCGTTTCGGCTGCGGCGAGCGGTATCAGCTCACTCAAAGGCGGTAATACGGTTATCC
ACAGAATCAGGGGATAACGCAGGAAAGAACATGTGAGCAAAAGGCCAGCAAAAGGCCAGGAA
CCGTAAAAAGGCCGCGTTGCTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCACA
AAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCGTTT
CCCCCTGGAAGCTCCCTCGTGCGCTCTCCTGTTCCGACCCTGCCGCTTACCGGATACCTGTC
CGCCTTTCTCCCTTCGGGAAGCGTGGCGTTTTCTCAATGCTCACGCTGTAGGTATCTCAGTT
CGGTGTAGGTGCTTCGCTCCAAGCTGGGCTGTGTGCACGAACCCCCCGTTAGCCCCGACCGC
TGCGCCTTATCCGGTAACTATCGTCTTGAGTCCAACCCGGTAAGACACGACTTATCGCCACT
GGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTTCT
TGAAGTGGTGGCTAACTACGGCTACACTAGAAGGACAGTATTTGGTATCTGCGCTCTGCTG
AAGCCAGTTACCTTCGGAAAAAGAGTTGGTAGCTCTTGATCCGGCAAACAAACCACCGCTGG
TAGCGGTGGTTTTTTTTGTTTGCAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAG
ATCCTTTGATCTTTTCTACGGGGTCTGACGCTCAGTGGAAACGAAACTCACGTTAAGGGATT
TTGGTCATGAGATTATCAAAAAGGATCTTCACCTAGATCCTTTTAAATTAAAAATGAAGTTT
TAAATCAATCTAAAGTATATATGAGTAACTTGGTCTGACAGTTACCAATGCTTAATCAGTG
AGGCACCTATCTCAGCGATCTGTCTATTTCTGTTTCATCCATAGTTGCCTGACTCCCCGTCGTG
TAGATAACTACGATACGGGAGGGCTTACCATCTGGCCCCAGTGCTGCAATGATACCGCGAGA
CCCACGCTCACCGGCTCCAGATTTATCAGCAATAAACCCAGCCAGCCGGAAGGGCCGAGCGCA
GAAGTGGTCTGCAACTTTATCCGCCTCCATCCAGTCTATTAATTGTTGCCGGGAAGCTAGA
GTAAGTAGTTTCGCCAGTTAATAGTTTTCGCGCAACGTTGTTGCCATTGCTACAGGCATCGTGGT
GTCACGCTCGTCTGTTTGGTATGGCTTCATTCAGCTCCGGTTCCCAACGATCAAGGCGAGTTA
CATGATCCCCCATGTTGTGCAAAAAGCGGTTAGCTCCTTCGGTCTCCGATCGTTGTCAGA
AGTAAGTTGGCCGCGAGTGTTATCACTCATGGTTATGGCAGCACTGCATAATTCTCTTACTGT
CATGCCATCCGTAAGATGCTTTTCTGTGACTGGTGAGTACTCAACCAAGTCATTCTGAGAAT
AGTGTATGCGGCGACCGAGTTGCTCTTGCCCGCGCTCAATACGGGATAATACCGCGCCACAT
AGCAGAACTTTAAAAGTGCTCATCATTGGAAAACGTTCTTCGGGGCGAAAACCTCTCAAGGAT
CTTACCGCTGTTGAGATCCAGTTCGATGTAACCCACTCGTGACCCAACTGATCTTCAGCAT
CTTTTACTTTTACCAGCGTTTCTGGGTGAGCAAAAACAGGAAGGCAAAATGCCGCAAAAAG
GGAATAAGGGCGACACGGAAATGTTGAATACTCATACTCTTCCTTTTTCAATATTATTGAAG
CATTTATCAGGGTTATTGTCTCATGAGCGGATACATATTTGAATGTATTTAGAAAAATAAAC
AAATAGGGGTTCCGCGCACATTTCCCCGAAAAGTGCCACCTGACGCGCCCTGTAGCGGCGCA
TTAAGCGCGGCGGGTGTGGTGGTTACGCGCAGCGTGACCGCTACACTTGCCAGCGCCCTAGC
GCCCCGCTCCTTTTCGCTTTCTTCCCTTCTTCTCGCCACGTTGCGCGGCTTTCCCCGTCAG
CTCTAAATCGGGGGCTCCCTTTAGGGTTCCGATTTAGTGCTTTACGGCACCTCGACCCCAA
AACTTGATTAGGGTGATGGTTCACGTAGTGGGCCATCGCCCTGATAGACGGTTTTTTCGCCC
TTTGACGTTGGAGTCCACGTTCTTTAATAGTGGACTCTTGTTCCAACTGGAACAACACTCA
ACCCTATCTCGGTCTATTCTTTTGATTTATAAGGGATTTTGCCGATTTTCGGCCTATTGGTTA
AAAAATGAGCTGATTTAACAAAAATTTAACGCGAATTTTAACAAAATATTAACGTTTACAAT
TTCCCATTCGCCATTACGGCTGCGCAACTGTTGGGAAGGGCGATCGGTGCGGGCCTCTTCGC
TATTACGCCAGCCCAAGCTACCATGATAAGTAAGTAATATTAAGGTACGGGAGGTACTTGGA
GCGGCCGCAATAAAATATCTTTATTTTATTACATCTGTGTGTTGGTTTTTTGTGTGAATCG
ATAGTACTAACATACGCTCTCCATCAAAACAAAACGAAACAAAACAACTAGCAAAATAGGC
TGTCCCCAGTGCAAGTGCAGGTGCCAGAACATT

Fig. 11

pCMV-pur-attB (SEQ ID NO: 4)

CTAGAGTCGGGGCGGCCGCGCTTCGAGCAGACATGATAAGATACATTGATGAGTTTGGAC
AAACCACAAC TAGAATGCAGTGAAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCT
TTATTTGTAAACCATTATAAGCTGCAATAAACAAGTTAACAACAATTGCATTCATTTTAT
GTTTCAGGTT CAGGGGAGGTGTGGGAGTTTTTTTAAAGCAAGTAAACCTCTACAAATGTG
GTAAATCGATAAGGATCAATTCGGCTTCAGGTACCGTCGACGATGTAGGTCACGGTCTCGA
AGCCGCGGTGCGGGTGCCAGGGCGTGCCCTTGGGCTCCCCGGGCGCGTACTCCACCTCACCC
ATCTGGTCCATCATGATGAACGGGTGAGGTGGCGGTAGTTGATCCCGGCGAACGCGCGGCG
CACCGGAAGCCCTCGCCCTCGAAACCGCTGGGCGCGGTGGTCACGGTGAGCACGGGACGTG
CGACGGCGTCGGCGGGTGCGGATACGCGGGGACGCTCAGCGGGTTCTCGACGGTCACGGCG
GGCATGTGACAGCCGAATTGATCCGTCGACCGATGCCCTTGAGAGCCTTCAACCCAGTCAG
CTCCTTCCGGTGGGCGCGGGGCATGACTATCGTCGCCGCACTTATGACTGTCTTCTTTATCA
TGCAACTCGTAGGACAGGTGCCGGCAGCGCTCTTCCGCTTCTCGCTCACTGACTCGCTGCG
CTCGGTGCTTCGGCTGCGGCGAGCGGTATCAGCTCACTCAAAGGCGGTAAATACGGTTATCCA
CAGAATCAGGGGATAACGCAGGAAAGAACATGTGAGCAAAAGGCCAGCAAAAGGCCAGGAAC
CGTAAAAAGGCCGCGTTTGCTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCACAA
AAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCGTTTC
CCCCTGGAAGCTCCCTCGTGCGCTCTCCTGTTCCGACCTGCCGCTTACCGGATACCTGTCC
GCCTTTCTCCCTTCGGGAAGCGTGGCGCTTTCTCAATGCTCACGCTGTAGGTATCTCAGTTC
GGTGTAGGTGCTTCGCTCCAAGCTGGGCTGTGTGCACGAACCCCCGTTACGCCCCGACCGCT
GCGCCTTATCCGGTAACCTATCGTCTTGAGTCCAACCCGGTAAGACACGACTTATCGCCACTG
GCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTTCTT
GAAGTGGTGGCCTAACTACGGCTACACTAGAAGGACAGTATTTGGTATCTGCGCTCTGCTGA
AGCCAGTTACCTTCGGAAAAAGAGTTGGTAGCTCTTGATCCGGCAAAACAAACCACCGCTGGT
AGCGGTGGTTTTTTTTGTTTGCAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGA
TCCTTTGATCTTTTCTACGGGGTCTGACGCTCAGTGGAACGAAAACTCACGTTAAGGGATTT
TGGTCATGAGATTATCAAAAAGGATCTTACCTAGATCCTTTTAAATTAAAAATGAAGTTTT
AAATCAATCTAAAGTATATATGAGTAACTTGGTCTGACAGTTACCAATGCTTAATCAGTGA
GGCACCTATCTCAGCGATCTGTCTATTTCTGTTCAATCCATAGTTGCCTGACTCCCCGTCGTGT
AGATAACTACGATACGGGAGGGCTTACCATCTGGCCCCAGTGCTGCAATGATACCGCGAGAC
CCACGCTCACCGGCTCCAGATTTATCAGCAATAAACCAGCCAGCCGGAAGGGCCGAGCGCAG
AAGTGGTCTCGCAACTTTATCCGCCTCCATCCAGTCTATTAATTGTTGCCGGGAAGCTAGAG
TAAGTAGTTCGCCAGTTAATAGTTTGCGCAACGTTGTTGCCATTGCTACAGGCATCGTGGTG
TCACGCTCGTCGTTTGGTATGGCTTCATTGAGCTCCGGTTCCCAACGATCAAGGCGAGTTAC
ATGATCCCCCATGTTGTGCAAAAAGCGGTTAGCTCCTTCGGTCCTCCGATCGTTGTCAGAA
GTAAGTTGGCCGAGTGTTATCACTCATGGTTATGGCAGCACTGCATAATTCTCTTACTGTC
ATGCCATCCGTAAGATGCTTTTCTGTGACTGGTGAGTACTCAACCAAGTCATTCTGAGAATA
GTGTATGCGGCGACCGAGTTGCTCTTGCCCGGCGTCAATACGGGATAATACCGCGCCACATA
GCAGAACTTTAAAAGTGCTCATATTGGAACGTTCTTCGGGGCGAAAACTCTCAAGGATC
TTACCGCTGTTGAGATCCAGTTCGATGTAACCCACTCGTGCACCCAACTGATCTTCAGCATC
TTTTACTTTTACCAGCGTTTCTGGGTGAGCAAAAACAGGAAGGCAAAATGCCGCAAAAAGG
GAATAAGGGCGACACGGAAATGTTGAATACTCATACTCTTCTTTTCAATATTATTGAAGC
ATTTATCAGGGTTATTGTCTCATGAGCGGATACATATTTGAATGTATTTAGAAAAATAACA
AATAGGGGTTCCGCGCACATTTCCCCGAAAAGTGCCACCTGACGCGCCCTGTAGCGGCGCAT
TAAGCGCGGCGGGTGTGGTGGTTACGCGCAGCGTGACCGCTACACTTGCCAGCGCCCTAGCG
CCCGCTCCTTTTCGCTTTCTTCCCTTCTTCTCGCCACGTTCCGCGGCTTTCCCCGTCAAGC
TCTAAATCGGGGGCTCCCTTTAGGGTTCCGATTTAGTGCTTTACGGCACCTCGACCCCCAAA
AACTTGATTAGGGTGATGGTTCACGTAGTGGGCCATCGCCCTGATAGACGTTTTTTCGCCCT
TTGACGTTGGAGTCCACGTTCTTTAATAGTGGACTCTTGTTCCAACTGGAACAACACTCAA
CCCTATCTCGGTCTATTCTTTTGATTTATAAGGGATTTTGCCGATTTCGGCCTATTGGTTAA
AAAAAGAGCTGATTTAACA AAAATTTAACGCGAATTTTAACAAAATATTAACGTTTACAATT
TCCCATTGCGCATTCAGGCTGCGCAACTGTTGGGAAGGGCGATCGGTGCGGGCCTCTTCGCT
ATTACGCCAGCCCAAGCTACCATGATAAGTAAGTAATTAAGGTACGGGAGGTACTTGAG
CGGCCGCAATAAAAATATCTTTATTTTATTACATCTGTGTGTGGTTTTTTGTGTGAATCGA

TAGTACTAACATACGCTCTCCATCAAAACAAAACGAAACAAAACAACTAGCAAAATAGGCT
GTCCCCAGTGCAAGTGCAGGTGCCAGAACATTTCTCTATCGATAGGTACCGAGCTCTTACGC
GTGCTAGCCCTCGAGCAGGATCTATACATTGAATCAATATTGGCAATTAGCCATATTAGTCA
TTGGTTATATAGCATAAATCAATATTGGCTATTGGCCATTGCATACGTTGTATCTATATCAT
AATATGTACATTTATATTGGCTCATGTCCAATATGACCGCCATGTTGACATTGATTATTGAC
TAGTTATTAATAGTAATCAATTACGGGGTCATTAGTTCATAGCCCATATATGGAGTTCGCGC
TTACATAACTTACGGTAAATGGCCCGCCTGGCTGACCGCCCAACGACCCCGCCCATTGACG
TCAATAATGACGTATGTTCCCATAGTAACGCCAATAGGGACTTTCCATTGACGTCAATGGGT
GGAGTATTTACGGTAAACTGCCCCTTGGCAGTACATCAAGTGTATCATATGCCAAGTCCGC
CCCCTATTGACGTCAATGACGGTAAATGGCCCGCCTGGCATTATGCCCAGTACATGACCTTA
CGGGACTTTTCTACTTGGCAGTACATCTACGTATTAGTCATCGCTATTACCATGGTGATGCG
GTTTTGGCAGTACATCAATGGGCGTGGATAGCGGTTTGA CTACGGGGATTTCCAAGTCTCC
ACCCCATTGACGTCAATGGGAGTTTGT TTTGGCACCAAATCAACGGGACTTTCCA AATGT
CGTAACAAC TCCGCCCCATTGACGCAAATGGGCGGTAGGCGTGTACGGTGGGAGGTCTATAT
AAGCAGAGCTCGTTTAGTGAACCGTCAGATCGCCTGGAGACGCCATCCACGCTGTTTTGACC
TCCATAGAAGACACCGGGACCGATCCAGCCTCCCCTCGAAGCTCGACTCTAGGGGCTCGAGA
TCTGCGATCTAAGTAAGCTTGCATGCCTGCAGGTGCGCCGCCACGACCGGTGCCGCCACCAT
CCCCTGACCCACGCCCCCTGACCCCTCACAAGGAGACGACCTTCCATGACCGAGTACAAGCCC
ACGGTGCGCCTCGCCACCCGCGACGACGTCCCCCGGGCCGTACGCACCCTCGCCGCCGCGTT
CGCCGACTACCCCGCCACGCGCCACACCGTCGACCCGGACCGCCACATCGAGCGGGTCACCG
AGCTGCAAGAACTCTTCCTCACGCGCGTCGGGCTCGACATCGGCAAGGTGTGGGTGCGGGAC
GACGGCGCCGCGGTGGCGGTCTGGACCACGCCGAGAGCGTCGAAGCGGGGGCGGTGTTTCGC
CGAGATCGGCCCGCGCATGGCCGAGTTGAGCGGTTCCCGGCTGGCCGCGCAGCAACAGATGG
AAGGCCTCCTGGCGCCGCACCGGCCCAAGGAGCCCGCGTGGTTCTTGCCACCGTCGGCGTC
TCGCCCCGACCACCAGGGCAAGGGTCTGGGCAGCGCCGTCGTGCTCCCCGGAGTGGAGGCGGC
CGAGCGCGCCGGGTGCCCGCCTTCCTGGAGACCTCCGCGCCCCGCAACCTCCCCTTCTACG
AGCGGCTCGGCTTACCGTACCGCCGACGTGAGGTGCCGAAGGACCGCGCACCTGGTG
ATGACCCGCAAGCCCGGTGCCTGACGCCCCGCCCCACGACCCGAGCGCCCGACCGAAAGGAG
CGCACGACCCCATGGCTCCGACCGAAGCCGACCCGGGCGGCCCCGCGACCCCGCACCCGCC
CCCAGGCCCAACCGACT

Fig. 12

pCMV-pur-attP (SEQ ID NO: 5)

CTAGAGTCGGGGCGGCCGCGCTTCGAGCAGACATGATAAGATACATTGATGAGTTTGGAC
AAACCACAACCTAGAATGCAGTGAAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCT
TTATTTGTAACCATTATAAGCTGCAATAACAAGTTAACAACAACAATTGCATTCATTTTAT
GTTTCAGGTTTCAGGGGGAGGTGTGGGAGGTTTTTTAAAGCAAGTAAAACCTCTACAAATGTG
GTAAAATCGATAAGGATCAATTGGCTTCGACTAGTACTGACGGACACACCGAAGCCCCGGC
GGCAACCCTCAGCGGATGCCCCGGGGCTTCAGTTTTCCAGGTGAGAAGCGGTTTTTCGGGA
GTAGTCCCCCAACTGGGGTAACCTTTGAGTTCTCTCAGTTGGGGGCGTAGGGTCGCCGACAT
GACACAAGGGGTTGTGACCGGGGTGGACACGTACGCGGGTGCTTACGACCGTCAGTCGCGCG
AGCGCGACTAGTACAAGCCGAATTGATCCGTCGACCGATGCCCTTGAGAGCCTTCAACCCAG
TCAGCTCCTTCCGGTGGGCGCGGGGCATGACTATCGTCGCCGCACTTATGACTGTCTTCTTT
ATCATGCAACTCGTAGGACAGGTGCCGGCAGCGCTCTTCCGCTTCTCGCTCACTGACTCGC
TGCCTCGGTCGTTCCGCTGCGGCGAGCGGTATCAGCTCACTCAAAGGCGGTAATACGGTTA
TCCACAGAATCAGGGGATAACGCAGGAAAGAACATGTGAGCAAAGGCCAGCAAAGGCCAG
GAACCGTAAAAAGGCCGCGTTGCTGGCGTTTTTTCATAGGCTCCGCCCCCTGACGAGCATC
ACAAAAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCG
TTTCCCCCTGGAAGCTCCCTCGTGCGCTCTCTGTTCCGACCCTGCCGCTTACCGGATACCT
GTCCGCTTTCTCCCTTCGGGAAGCGTGCGCTTTCTCAATGCTCACGCTGTAGGTATCTCA
GTTCCGGTGTAGGTGCTTCGCTCCAAGCTGGGCTGTGTGCACGAACCCCCCGTTTCAGCCCGAC
CGCTGCGCTTATCCGGTAACCTATCGTCTTGAGTCCAACCCGGTAAGACACGACTTATCGCC
ACTGGCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGT
TCTTGAAGTGGTGGCCTAACTACGGCTACACTAGAAGGACAGTATTTGGTATCTGCGCTCTG
CTGAAGCCAGTTACCTTCGGAAAAAGAGTTGGTAGCTCTTGATCCGGCAAACAAACACCGC
TGGTAGCGGTGGTTTTTTTGTGTTTGAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAG
AAGATCCTTTGATCTTTTCTACGGGGTCTGACGCTCAGTGGAACGAAAACCTCACGTTAAGGG
ATTTTGGTCATGAGATTATCAAAAAGGATCTTCACTAGATCCTTTTAAATTAATAAATGAAG
TTTTAAATCAATCTAAAGTATATATGAGTAAACTTGGTCTGACAGTTACCAATGCTTAATCA
GTGAGGCACCTATCTCAGCGATCTGTCTATTTCTGTTTCATCCATAGTTGCCTGACTCCCCGTC
GTGTAGATAACTACGATACGGGAGGGCTTACCATCTGGCCCCAGTGCTGCAATGATACCGCG
AGACCCACGCTCACCGGCTCCAGATTTATCAGCAATAAACCAGCCAGCCGGAAGGGCCGAGC
GCAGAAGTGGTCTGCAACTTTATCCGCCTCCATCCAGTCTATTAATTGTTGCCGGGAAGCT
AGAGTAAGTAGTTCGCCAGTTAATAGTTTGCGCAACGTTGTTGCCATTGCTACAGGCATCGT
GGTGTACGCTCGTCTGTTTGGTATGGCTTCATTGAGCTCCGGTTCCCAACGATCAAGGCGAG
TTACATGATCCCCATGTTGTGCAAAAAAGCGTTAGCTCCTTCGGTCTCCGATCGTTGTC
AGAAGTAAGTTGGCCGCGAGTGTTATCACTCATGGTTATGGCAGCACTGCATAATTCTCTTAC
TGTCATGCCATCCGTAAGATGCTTTTCTGTGACTGGTGAGTACTCAACCAAGTCATTCTGAG
AATAGTGTATGCGGCGACCGAGTTGCTCTTGCCCCGGCGTCAATACGGGATAATACCGCGCCA
CATAGCAGAACTTTAAAGTGCTCATATTGGAACCGTTCTTCGGGGCGAAACTCTCAAG
GATCTTACCCTGTTGAGATCCAGTTGATGTAACCCACTCGTGCAACCCAACTGATCTTCAG
CATCTTTTACTTTTACCAGCGTTTCTGGGTGAGCAAAAAACAGGAAGGCAAAATGCCGCAAAA
AAGGGAATAAGGGCGACCGGAAATGTTGAATACTCATACTCTTCTTTTCAATATTATTG
AAGCATTTATCAGGGTTATTGTCTCATGAGCGGATACATATTTGAATGTATTTAGAAAAATA
AACAAATAGGGGTTCCGCGCACATTTCCCCGAAAAGTGCCACCTGACGCGCCCTGTAGCGGC
GCATTAAGCGCGCGGGGTGTGGTGGTTACGCGCAGCGTGACCGCTACACTTGCCAGCGCCCT
AGCGCCCGCTCCTTTTCGCTTTCTTCCCTTCTTCTCGCCACGTTCCGCGGCTTTCCCCGTC
AAGCTCTAAATCGGGGGCTCCCTTTAGGGTTCCGATTTAGTGCTTTACGGCACCTCGACCCC
AAAAAACTTGATTAGGGTGATGGTTACAGTAGTGGGCCATCGCCCTGATAGACGGTTTTTCG
CCCTTTGACGTTGGAGTCCACGTTCTTTAATAGTGGACTCTTGTTCCAACTGGAACAACAC
TCAACCCTATCTCGTCTATTCTTTTGAATTTATAAGGGATTTTGCCGATTTCCGGCTATTGG
TTAAAAAATGAGCTGATTTAACAAAAATTTAACGCGAATTTTAACAAAAATTAACGTTTAC
AATTTCCCATTCGCCATTACAGGCTGCGCAACTGTTGGGAAGGGCGATCGGTGCGGGCCTCTT
CGCTATTACGCCAGCCCAAGCTACCATGATAAGTAAGTAATATTAAGGTACGGGAGGTACTT
GGAGCGGCCGCAATAAAATATCTTTATTTTATTACATCTGTGTGTTGGTTTTTGTGTGAA
TCGATAGTACTAACATACGCTCTCCATCAAAACAAAACGAAACAAAACAACTAGCAAAATA

GGCTGTCCCCAGTGCAAGTGCAGGTGCCAGAACATTTCTCTATCGATAGGTACCGAGCTCTT
ACGCGTGCTAGCCCTCGAGCAGGATCTATACATTGAATCAATATTGGCAATTAGCCATATTA
GTCATTGGTTATATAGCATAAATCAATATTGGCTATTGGCCATTGCATACGTTGTATCTATA
TCATAATATGTACATTTATATTGGCTCATGTCCAATATGACCGCCATGTTGACATTGATTAT
TGACTAGTTATTAATAGTAATCAATTACGGGGTCATTAGTTCATAGCCCATATATGGAGTTC
CGCGTTACATAACTTACGGTAAATGGCCCGCCTGGCTGACCGCCCAACGACCCCCGCCATT
GACGTCAATAATGACGTATGTTCCCATAGTAACGCCAATAGGGACTTTCCATTGACGTCAAT
GGGTGGAGTATTTACGGTAAACTGCCCACTTGGCAGTACATCAAGTGTATCATATGCCAAGT
CCGCCCCCTATTGACGTCAATGACGGTAAATGGCCCGCCTGGCATTATGCCCAGTACATGAC
CTTACGGGACTTTCTACTTGGCAGTACATCTACGTATTAGTCATCGCTATTACCATGGTGA
TGCGGTTTTGGCAGTACATCAATGGGCGTGGATAGCGGTTTGACTCACGGGGATTTCCAAGT
CTCCACCCCATTTGACGTCAATGGGAGTTTGTTTTGGCACCAAATCAACGGGACTTTCCAAA
ATGTCGTAACAACCTCCGCCCCATTGACGCAAATGGGCGGTAGGCGGTACGGTGGGAGGTCT
ATATAAGCAGAGCTCGTTTAGTGAACCGTCAGATCGCCTGGAGACGCCATCCACGCTGTTTT
GACCTCCATAGAAGACACCGGGACCGATCCAGCCTCCCCCTCGAAGCTCGACTCTAGGGGCTC
GAGATCTGCGATCTAAGTAAGCTTGATGCCTGCAGGTGGCCGCCACGACCGGTGCCGCCA
CCATCCCCTGACCCACGCCCCCTGACCCCTCACAAGGAGACGACCTTCCATGACCGAGTACAA
GCCCACGGTGCGCCTCGCCACCCGCGACGACGTCCCCCGGGCCGTACGCACCCTCGCCGCCG
CGTTCGCCGACTACCCCGCCACGCGCCACACCGTCGACCCGGACCGCCACATCGAGCGGGTC
ACCGAGCTGCAAGAACTCTTCCTCACGCGCGTCGGGCTCGACATCGGCAAGGTGTGGGTCGC
GGACGACGGCGCCGCGGTGGCGGTCTGGACCACGCCGGAGAGCGTCGAAGCGGGGGCGGTGT
TCGCCGAGATCGGCCCGCGCATGGCCGAGTTGAGCGGTTCCCGGCTGGCCGCGCAGCAACAG
ATGGAAGGCCTCCTGGCGCCGCACCGGCCCAAGGAGCCCGCGTGGTTCTTGGCCACCGTCGG
CGTCTCGCCCGACCAACAGGGCAAGGGTCTGGGCAGCGCCGTCGTGCTCCCGGAGTGGAGG
CGGCCGAGCGCGCCGGGGTGCCCGCCTTCTGGAGACCTCCGCGCCCCGCAACCTCCCCTTC
TACGAGCGGCTCGGCTTACCGTCAACGCCGACGTGAGGTGCCCCGAAGGACCGCGCACCTG
GTGCATGACCCGCAAGCCCGGTGCCTGACGCCCGCCCCACGACCCGCGAGCGCCCGACCGAAA
GGAGCGCACGACCCCATGGCTCCGACCGAAGCCGACCCGGGCGGCCCCGCGACCCCGCACC
CGCCCCCGAGGCCCAACCGACT

Fig. 13

pCMV-EGFP-attB (SEQ ID NO: 6)

CTAGAGTCGGGGCGGCCGCGCTTCGAGCAGACATGATAAGATACATTGATGAGTTTGGAC
AAACCACAAC TAGAATGCAGTGAAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGCT
TTATTTGTAAACCATTATAAGCTGCAATAACAAGTTAACAACAACATTGCATTCATTTTAT
GTTTCAGGTTTCAGGGGGAGGTGTGGGAGGTTTTTTAAAGCAAGTAAAACCTCTACAAATGTG
GTAAAATCGATAAGGATCAATTCCGCTTCAGGTACCGTCGACGATGTAGGTCACGGTCTCGA
AGCCGCGGTGCGGGTGCCAGGGCGTGCCCTTGGGCTCCCCGGGCGCGTACTCCACCTCAGCC
ATCTGGTCCATCATGATGAACGGGTGAGGTGGCGGTAGTTGATCCCGGCGAACGCGCGGGC
CACC GGGAAGCCCTCGCCCTCGAAACCGCTGGGCGCGGTGGTCACGGTGAGCACGGGACGTG
CGACGGCGTCGGCGGGTGCGGATACGCGGGGACGCGTCAGCGGGTTCTCGACGGTCACGGCG
GGCATGTGACAGCCGAATTGATCCGTCGACCGATGCCCTTGAGAGCCTTCAACCCAGTCAG
CTCCTTCCGGTGGGCGCGGGGCATGACTATCGTCGCCGCACTTATGACTGTCTTCTTTATCA
TGCAACTCGTAGGACAGGTGCCGGCAGCGCTCTTCCGCTTCTCGCTCACTGACTCGCTGCG
CTCGGTGCTTCGGCTGCGGCGAGCGGTATCAGCTCACTCAAAGGCGGTAAATACGGTTATCCA
CAGAATCAGGGGATAACGCAGGAAAGAACATGTGAGCAAAAGGCCAGCAAAAGGCCAGGAAC
CGTAAAAAGGCCGCGTTGCTGGCGTTTTTCCATAGGCTCCGCCCCCTGACGAGCATCAGAA
AAATCGACGCTCAAGTCAGAGGTGGCGAAACCCGACAGGACTATAAAGATACCAGGCGTTTT
CCCCTGGAAGCTCCCTCGTGCGCTCTCCTGTTCCGACCCTGCCGCTTACCGGATACCTGTCC
GCCTTTCTCCCTTCGGGAAGCGTGGCGCTTTCTCAATGCTCACGCTGTAGGTATCTCAGTTC
GGTGTAGGTGCTTCGCTCCAAGCTGGGCTGTGTGCACGAACCCCCGTTTACGCCGACCGCT
GCGCCTTATCCGGTAACTATCGTCTTGAGTCCAACCCGGTAAGACACGACTTATCGCCACTG
GCAGCAGCCACTGGTAACAGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTTCTT
GAAGTGGTGGCCTAACTACGGCTACACTAGAAGGACAGTATTTGGTATCTGCGCTCTGCTGA
AGCCAGTTACCTTCGGAAAAAGAGTTGGTAGCTCTTGATCCGGCAAAACAAACCCGCTGGT
AGCGGTGGTTTTTTTTGTTTGCAAGCAGCAGATTACGCGCAGAAAAAAGGATCTCAAGAAGA
TCCTTTGATCTTTTCTACGGGTCTGACGCTCAGTGGAACGAAAACTCACGTTAAGGGATTT
TGGTCATGAGATTATCAAAAAGGATCTTCACCTAGATCCTTTTAAATTA AAAATGAAGTTTT
AAATCAATCTAAAGTATATATGAGTAACTTGGTCTGACAGTTACCAATGCTTAATCAGTGA
GGCACCTATCTCAGCGATCTGTCTATTTTCGTTTCATCCATAGTTGCCTGACTCCCCGTGCTGT
AGATAACTACGATACGGGAGGGCTTACCATCTGGCCCCAGTGCTGCAATGATACCGCGAGAC
CCACGCTCACCGGCTCCAGATTTATCAGCAATAAACAGCCAGCCGGAAGGGCCGAGCGCAG
AAGTGGTCCCTGCAACTTTATCCGCCTCCATCCAGTCTATTAATTGTTGCCGGGAAGCTAGAG
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TCACGCTCGTCTGTTTGGTATGGCTTCATTGAGTCCGGTCCCAACGATCAAGGCGAGTTAC
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Fig. 14

p-12.0-lys-LSPIFNMM-CMV-pur-attB (SEQ ID NO: 7)

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Fig. 15

pOM IFN-Ins-CMV-pur-attB (SEQ ID NO: 8)

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TCGTATACTGGCCAAGTCTTCCCAGCTGTCAGCCTGCTGACCCTCTGCAGTTCAGGACCAT
GAAACGTGGCACTGTAAGACGTGTCCCCTGCCTTTGCTTGCCACAGATCTCTGCCCTTGTG
CTGACTCCTGCACACAAGAGCATTTCCTGTAGCCAAACAGCGATTAGCCATAAGCTGCACC
TGACTTTGAGGATTAAGAGTTTGCAATTAAGTGGATTGCAGCAGGAGATCAGTGGCAGGGTT
GCAGATGAAATCCTTTCTAGGGGTAGCTAAGGGCTGAGCAACCTGTCTACAGCACAAAGCC
AAACCAGCCAAGGGTTTTCTGTGCTGTTACAGAGGCAGGGCCAGCTGGAGCTGGAGGAGG
TTGTGCTGGGACCCTTCTCCCTGTGCTGAGAATGGAGTGATTTCTGGGTGCTGTTTCTGTGG
CTTGCACTGAGCAGCTCAAGGGAGATCGGTGCTCCTCATGCAGTGCCAAAACCTCGTGTGTTGA
TGCAGAAAGATGGATGTGCACCTCCCTCCTGCTAATGCAGCCGTGAGCTTATGAAGGCAATG
AGCCCTCAGTGCAGCAGGAGCTGTAGTGAATCCTGTAGGTGCTAGGGAAAATCTCTGGTTT
CCAGGGATGCATTATAAGGGCAATATATCTTGGAGCTGCGCCAAATCTTTCTGAAATATTC
ATGCGTGTTCCTTAATTTATAGAAACAAACACAGCAGAATAATTATTCCAATGCCTCCCCCT
CGAAGGAAACCCATATTTCCATGTAGAAATGTAACCTATATACACACAGCCATGCTGCATCC
TTCAGAACGTGCCAGTGCTCATCTCCCATGGCAAATACTACAGGTATTCTCACTATGTTGG
ACCTGTGAAAGGAACCATGGTAAGAACTTCGGTTAAAGGTATGGCTGCAAACTACTCATA
CCAAAACAGCAGAGCTCCAGACCTCCTCTTAGGAAAGAGCCACTTGGAGAGGGATGGTGTGA
AGGCTGGAGGTGAGAGACAGAGCCTGTCCAGTTTTCTGTCTCTATTTTCTGAAACGTTTTG
CAGGAGGAAAGGACAACTGTACTTTCAGGCATAGCTGGTGCCCTCACGTAAATAAGTTCCCC
GAACTTCTGTGTCAATTTGTTCTTAAGATGCTTTGGCAGAACACTTTGAGTCAATTGCTTAA
CTGTGACTAGGTCTGTAAATAAGTGCTCCCTGCTGATAAGGTTCAAGTGACATTTTTAGTGG

TATTTGACAGCATTTACCTTGCTTTCAAGTCTTCTACCAAGCTCTTCTATACTTAAGCAGTG
AAACCGCCAAGAAACCTTCCTTTTATCAAGCTAGTGCTAAATACCATTAACTTCATAGGTT
AGATACGGTGCTGCCAGCTTCACCTGGCAGTGTTGGTCAGTTCTGCTGGTGACAAAGCCTC
CCTGGCCTGTGCTTTTACCTAGAGGTGAATATCCAAGAATGCAGAACTGCATGGAAAGCAGA
GCTGCAGGCACGATGGTGCTGAGCCTTAGCTGCTTCTGCTGGGAGATGTGGATGCAGAGAC
GAATGAAGGACCTGTCCCTTACTCCCTCAGCATTCTGTGCTATTTAGGGTTCTACCAGAGT
CCTTAAGAGGTTTTTTTTTTTTTTGGTCCAAAAGTCTGTTTGTGTTTGGTTTTGACCACTGAGA
GCATGTGACACTTGTCTCAAGCTATTAACCAAGTGTCCAGCCAAAATCAATTGCCTGGGAGA
CGCAGACCATTACCTGGAGGTGAGGACCTCAATAAATATTACCAGCCTCATTGTGCCGCTGA
CAGATTAGCTGGCTGCTCCGTGTTCCAGTCCAACAGTTCGGACGCCACGTTTGTATATATT
TGCAGGCAGCCTCGGGGGGACCATCTCAGGAGCAGAGCACCGGCAGCCGCTGCAGAGCCGG
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AGAGCAGCTGCTCTGTGGGCTGCGATCTGCCTCAGACCCACAGCCTGGGCAGCAGGAGACC
CTGATGCTGCTGGCTCAGATGAGGAGAATCAGCCTGTTTAGCTGCCTGAAGGATAGGCACGA
TTTTGGCTTTCTCAAGAGGAGTTTGGCAACCAGTTTCAGAAGGCTGAGACCATCCCTGTGC
TGCACGAGATGATCCAGCAGATCTTTAACCTGTTTAGCACCAGGATAGCAGCGCTGCTTGG
GATGAGACCCTGCTGGATAAGTTTTACACCGAGCTGTACCAGCAGCTGAACGATCTGGAGGC
TTGCGTGATCCAGGGCGTGCGGCTGACCGAGACCCCTCTGATGAAGGAGGATAGCATCCTGG
CTGTGAGGAAGTACTTTTCAAGGATCACCCTGTACCTGAAGGAGAAGAAGTACAGCCCCCTGC
GCTTGGGAAGTCGTGAGGGCTGAGATCATGAGGAGCTTTAGCCTGAGCACCAACCTGCAAGA
GAGCTTGAGGTCTAAGGAGTAAAAAGTCTAGAGTCGGGGCGGCCCGGCTTCGAGCAGACA
TGATAAGATACATTGATGAGTTTGGACAAACCACAACCTAGAATGCAGTGAAAAAATGCTTT
ATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAAACCATTATAAGCTGCAATAACAAGT
TAACAACAACAATTGCATTCATTTTATGTTTTCAGGTTTCAGGGGAGGTGTGGGAGGTTTTTT
AAAGCAAGTAAACCTCTACAAATGTGGTAAAATCGATAACGTCGACCTCGACTAGAGCGGC
CACTAACATACGCTCTCCATCAAAACAAAACGAAACAAAACAACTAGCAAAATAGGCTGTC
CCCAGTGCAAGTGCAAGTGCCAGAACATTTCTCTATCGATAGGTACCGAGCTCTTACGCGTG
CTAGCCCTCGAGCAGGATCTATACATTGAATCAATATTGGCAATTAGCCATATTAGTCATTG
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ATGTACATTTATATTGGCTCATGTCCAATATGACCGCCATGTTGACATTGATTATTGACTAG
TTATTAATAGTAATCAATTACGGGGTCATTAGTTTCATAGCCCATATATGGAGTTCCGCGTTA
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ATAATGACGTATGTTCCCATAGTAACGCCAATAGGGACTTTCCATTGACGTCAATGGGTGGA
GTATTTACGGTAAACTGCCCACTTGGCAGTACATCAAGTGTATCATATGCCAAGTCCGCCCC
CTATTGACGTCAATGACGGTAAATGGCCCCGCTGGCATTATGCCCAGTACATGACCTTACGG
GACTTTCTACTTGGCAGTACATCTACGTATTAGTCATCGCTATTACCATGGTGATGCGGTT
TTGGCAGTACATCAATGGGCGTGGATAGCGGTTTGAATCACGGGGATTTCGAAGTCTCCACC
CCATTGACGTCAATGGGAGTTTGTTTTGGCACCAAAATCAACGGGACTTTCCAAAATGTCGT
AACAACCTCCGCCCCATTGACGCAAATGGGCGGTAGGCGGTGACGGTGGGAGGTCTATATAAG
CAGAGCTCGTTTAGTGAAACCGTCAGATCGCCTGGAGACGCCATCCACGCTGTTTTGACCTCC
ATAGAAGACACCGGGACCGATCCAGCCTCCCCTCGAAGCTCGACTCTAGGGGCTCGAGATCT
GCGATCTAAGTAAGCTTGCTATGCCTGCAGGTGCGCCGCCACGACCGGTGCCGCCACCATCCC
CTGACCCACGCCCCCTGACCCCTCACAAGGAGACGACCTTCCATGACCGAGTACAAGCCCACG
GTGCGCCTCGCCACCCGCGACGACGTCCCCCGGGCCGTACGCACCCTCGCCGCCGCGTTTCGC
CGACTACCCCGCCACGCGCCACACCGTCGACCCGGACCGCCACATCGAGCGGGTCACCGAGC
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GGCGCCGCGGTGGCGGTCTGGACACGCGGAGAGCGTCGAAGCGGGGGCGGTGTTTCGCCGA
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GCCTCCTGGCGCCGACCCGGCCAAAGGAGCCCGCGTGGTTCTTGCCACCGTCGGCGTCTCG
CCCGACCAACAGGGCAAGGGTCTGGGCAGCGCCGTCGTGCTCCCGGAGTGAGGGCGGCCGA
GCGCGCCGGGGTGCCCGCTTCTTGAGACCTCCGCGCCCCGCAACCTCCCCTTCTACGAGC
GGCTCGGCTTCACCGTCACCGCCGACGTGAGGTGCCCGAAGGACCGCGCACCTGGTGATG
ACCGCAAGCCCGGTGCCTGACGCCCCGCCACGACCCGAGCGCCCGACCGAAAGGAGCGC
ACGACCCCATGGCTCCGACCGAAGCCGACCCGGGCGGCCCGCCGACCCCGCACCCGCCCC

GAGGCCCACCGACTCTAGAGTCGGGGCGGCCGGCCGCTTCGAGCAGACATGATAAGATACAT
TGATGAGTTTGGACAAACCACAACCTAGAATGCAGTGAAAAAATGCTTTATTTGTGAAATTT
GTGATGCTATTGCTTTATTTGTAAACCATTATAAGCTGCAATAAACAAGTTAAACAACAACAT
TGCATTCATTTTATGTTTCAGGTTCAAGGGGAGGTGTGGGAGGTTTTTTAAAGCAAGTAAAA
CCTCTACAAATGTGGTAAAATCGATAAGGATCAATTCGGCTTCAGGTACCGTCGACGATGTA
GGTCACGGTCTCGAAGCCGCGGTGCGGGTGCCAGGGCGTGCCCTTGGGCTCCCCGGGCGCGT
ACTCCACCTCACCCTCTGGTCCATCATGATGAACGGGTCGAGGTGGCGGTAGTTGATCCCG
GCGAACGCGCGGCGCACCGGAAGCCCTCGCCCTCGAAACCGCTGGGCGCGGTGGTCACGGT
GAGCACGGGACGTGCGACGGCGTCCGGGGTGCGGATACGCGGGGCAGCGTCAGCGGGTTCT
CGACGGTCACGGCGGGCATGTGACAGCCGAATTGATCCGTCGACCGATGCCCTTGAGAGCC
TTCAACCCAGTCAGCTCCTTCCGGTGGGCGCGGGGCATGACTATCGTCGCCGCACTTATGAC
TGTCTTCTTTATCATGCAACTCGTAGGACAGGTGCCGGCAGC

Fig. 16

pRSV-C31int (SEQ ID NO: 9)

CTGCATTAATGAATCGGCCAACGCGCGGGGAGAGGCGGTTTGCCTATTGGGCGCTCTTCC
GCTTCCTCGCTCACTGACTCGCTGCGCTCGGTCTGTTTCGGCTGCGGCGAGCGGTATCAGCT
CACTCAAAGGCGGTAATACGGTTATCCACAGAATCAGGGGATAACGCAGGAAAGAACATG
TGAGCAAAAGGCCAGCAAAAGGCCAGGAACCGTAAAAAGGCCGCGTTGCTGGCGTTTTTC
CATAGGCTCCGCCCCCTGACGAGCATCACAAAAATCGACGCTCAAGTCAGAGGTGGCGA
AACCCGACAGGACTATAAAGATACCAGGCGTTTCCCCCTGGAAGCTCCCTCGTGCGCTCT
CCTGTTCCGACCCTGCCGCTTACCGGATACCTGTCCGCTTTCTCCCTTCGGGAAGCGTG
GCGCTTTCTCAATGCTCACGCTGTAGGTATCTCAGTTCGGTGTAGGTGCTTCGCTCCAAG
CTGGGCTGTGTGCACGAACCCCCCGTTTCAGCCCGACCGCTGCGCCTTATCCGGTAACAT
CGTCTTGAGTCCAACCCGGTAAGACACGACTTATCGCCACTGGCAGCAGCCACTGGTAAC
AGGATTAGCAGAGCGAGGTATGTAGGCGGTGCTACAGAGTTCTTGAAGTGGTGGCCTAAC
TACGGCTACACTAGAAGGACAGTATTTGGTATCTGCGCTCTGCTGAAGCCAGTTACCTTC
GGAAAAAGAGTTGGTAGCTCTTGATCCGGCAAAACAAACCACCGCTGGTAGCGGTGGTTTT
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TTTTCTACGGGGTCTGACGCTCAGTGGAAACGAAACTCACGTTAAGGGATTTTGGTCATG
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ATCTAAAGTATATATGAGTAACTTGGTCTGACAGTTACCAATGCTTAATCAGTGAGGCA
CCTATCTCAGCGATCTGTCTATTTTCGTTTCATCCATAGTTGCCTGACTCCCCGTCGTGTAG
ATAACTACGATACGGGAGGGCTTACCATCTGGCCCCAGTGCTGCAATGATACCGCGAGAC
CCACGCTCACCGGCTCCAGATTTATCAGCAATAAACAGCCAGCCGGAAGGGCCGAGCGC
AGAAGTGGTCCTGCAACTTTATCCGCTCCATCCAGTCTATTAATTGTTGCCGGAAGCT
AGAGTAAGTAGTTCGCCAGTTAATAGTTTGCAGCAACGTTGTTGCCATTGCTACAGGCATC
GTGGTGTACGCTCGTCTGTTGGTATGGCTTCATTCAGCTCCGGTTCCTAACGATCAAGG
CGAGTTACATGATCCCCATGTTGTGCAAAAAAGCGGTAGCTCCTTCGGTCTCCTCCGATC
GTTGTGAGAAGTAAGTTGGCCGAGTGTTATCACTCATGGTTATGGCAGCACTGCATAAT
TCTCTTACTGTATGCCATCCGTAAGATGCTTTTCTGTGACTGGTGAGTACTCAACCAAG
TCATTCTGAGAATAGTGTATGCGGCGACCGAGTTGCTCTTGCCCGCGTCAATACGGGAT
AATACCGCGCCACATAGCAGAACTTTAAAGTGCTCATCATTGGAAAAAGCTTCTTCGGGG
CGAAAACTCTCAAGGATCTTACCCTGTTGAGATCCAGTTCGATGTAACCCACTCGTGCA
CCCACTGATCTTCAGCATCTTTTACTTTTACCAGCGTTTCTGGGTGAGCAAAAAACAGGA
AGGCAAAATGCCGCAAAAAAGGGAATAAGGGCGACACGGAAATGTTGAATACTCATACTC
TTCCTTTTTCAATATTATTGAAGCATTTATCAGGGTTATTGTCTCATGAGCGGATACATA
TTTGAATGTATTTAGAAAAATAAACAAATAGGGGTTCCGCGCACATTTCCCCGAAAAGTG
CCACCTGACGTCGACGGATCGGGAGATCTCCCGATCCCCTATGGTCTGACTCTCAGTACAA
TCTGCTCTGATGCCGCATAGTTAAGCCAGTATCTGCTCCCTGCTTGTGTGTTGGAGGTCTG
CTGAGTAGTGCGCGAGCAAAATTTAAGCTACAACAAGGCAAGGCTTGACCGACAATTGCA
TGAAGAATCTGCTTAGGGTTAGGCGTTTTCGCTGCTTCGCGATGTACGGGCCAGATATA
CGCGTGCTAGGGGTCTAGGATCGATTCTAGGAATTCTCTAGCCGCGGTCTAGGGATCCCCG
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GCTCCCTGCTTGTGTGTTGGAGGTGCTGAGTAGTGCGCGAGCAAAATTTAAGCTACAAC
AAGGCAAGGCTTGACCGACAATTGCATGAAGAATCTGCTTAGGGTTAGGCGTTTTGCGCT
GCTTCGCGATGTACGGGCCAGATATACGCGTATCTGAGGGGACTAGGGTGTGTTTAGGCG
AAAAGCGGGGCTTCGGTTGTACGCGGTTAGGAGTCCCCCTCAGGATATAGTAGTTTTCGCTT
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GGACGAACCACTGAATTCCGCATTGCAGAGATAATTGTATTTAAGTGCCTAGCTCGATAC
AATAAACGCCATTTGACCATTACCAACATTGGTGTGCACCTCCAAGCTTGATGCCTGCA
GGTACCGGTCCGGAATTCCCAGGTGACGAGCTCACTAGTCGTAGGGTGCAGGACATGAC
ACAAGGGGTTGTGACCGGGGTGGACACGTACGCGGTGCTTACGACCGTCAGTCGCGCGA
GCGCGAGAATTCGAGCGCAGCAAGCCCAGCGACACAGCGTAGCGCCAACGAAGACAAGGC
GGCCGACCTTCAGCGCGAAGTCGAGCGCGACGGGGGCGGTTTCAGGTTTCGTCCGGCATT
CAGCGAAGCGCCGGGCACGTCCGCGTTCCGGACGGCGGAGCGCCCGAGTTTCAACGCAT

CCTGAACGAATGCCGCGCCGGGCGGCTCAACATGATCATTGTCTATGACGTGTCGCGCTT
CTCGCGCCTGAAGGTCATGGACGCGATTCCGATTGTCTCGGAATTGCTCGCCCTGGGCGT
GACGATTGTTTTCCACTCAGGAAGGCGTCTTCCGGCAGGGAAACGTCATGGACCTGATTCA
CCTGATTATGCGGCTCGACGCGTCGCACAAAGAATCTTCGCTGAAGTCGGCGAAGATTCT
CGACACGAAGAACCTTCAGCGCGAATTGGGCGGGTACGTCGGCGGGAAGGCGCCTTACGG
CTTCGAGCTTGTTTTCGGAGACGAAGGAGATCACGCGCAACGGCCGAATGGTCAATGTCGT
CATCAACAAGCTTGCGCACTCGACCACTCCCCTTACCGGACCCTTCGAGTTCGAGCCCGA
CGTAATCCGGTGGTGGTGGCGTGAGATCAAGACGCACAAACACCTTCCCTTCAAGCCGGG
CAGTCAAGCCGCCATTACCCGGGCGAGCATCACGGGGCTTTGTAAGCGCATGGACGCTGA
CGCCGTGCCGACCCGGGGCGAGACGATTGGGAAGAAGACCGCTTCAAGCGCCTGGGACCC
GGCAACCGTTATGCGAATCCTTCGGGACCCGCGTATTGCGGGCTTCGCCGCTGAGGTGAT
CTACAAGAAGAAGCCGGACGGCACGCCGACCACGAAGATTGAGGGTTACCGCATTCAGCG
CGACCCGATCACGCTCCGGCCGGTCGAGCTTGATTGCGGACCGATCATCGAGCCCGCTGA
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GCAAGCCATTCTGTCCGCCATGGACAAGCTGTACTGCGAGTGTGGCGCCGTCATGACTTC
GAAGCGCGGGGAAGAATCGATCAAGGACTCTTACCGCTGCCGTGCCCGGAAGGTGGTCTGA
CCCGTCCGCACCTGGGCAGCACGAAGGCACGTGCAACGTGAGCATGGCGGCACTCGACAA
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GGCGCTTCTGTGGGAAGCCGCCGACGCTTCGGCAAGCTCACTGAGGCGCCTGAGAAGAG
CGGCGAACGGGCGAACCTTGTTGCGGAGCGCGCCGACGCCCTGAACGCCCTTGAAGAGCT
GTACGAAGACCGCGCGGCAGGCGGTACGACGGACCCGTTGGCAGGAAGCACTTCCGGAA
GCAACAGGCAGCGCTGACGCTCCGGCAGCAAGGGGCGGAAGAGCGGCTTGCCGAACCTGA
AGCCGCCGAAGCCCCGAAGCTTCCCCTTGACCAATGGTTCCCCGAAGACGCCGACGCTGA
CCCGACCGGCCCTAAGTCGTGGTGGGGGCGCGCTCAGTAGACGACAAGCGCGTGTTCGT
CGGGCTCTTCGTAGACAAGATCGTTGTACGAAGTCGACTACGGGCAGGGGGCAGGGAAC
GCCCATCGAGAAGCGCGCTTCGATCACGTGGGCGAAGCCGCCGACCGACGACGACGAAGA
CGACGCCCAGGACGGCACGGAAGACGTAGCGGCGTAGCGAGACACCCGGATCCCTCGAGG
GGCCCTATTCTATAGTGTACCTAAATGCTAGAGCTCGCTGATCAGCCTCGACTGTGCCT
TCTAGTTGCCAGCCATCTGTTGTTTGGCCCTCCCCCGTGCCTTCCCTTGACCCTGGAAGGT
GCCACTCCCACTGTCCTTTCTAATAAAATGAGGAAATTGCATCGCATTGTCTGAGTAGG
TGTCATTCTATTCTGGGGGGTGGGGTGGGGCAGGACAGCAAGGGGGAGGATTGGGAAGAC
AATAGCAGGCATGCTGGGGATGCGGTGGGCTCTATGGCTTCTGAGGCGGAAAGAACCAGG
TGCCAGTCATAGCCGAATAGCCTCTCCACCCAAGCGGCCGAGAACCTGCGTGCAATCC
ACTGGGGGCGCG

Fig. 17

pCR-XL-TOPO-CMV-PUR-attB (SEQ ID NO: 10)

AGCGCCCAATACGCAAACCGCCTCTCCCGCGCGTTGGCCGATTCAATTAATGCAGCTGGC
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TCACTCATTAGGCACCCAGGCTTTACACTTTATGCTTCCGGCTCGTATGTTGTGTGGAA
TTGTGAGCGGATAACAATTTACACAGGAAACAGCTATGACCATGATTACGCCAAGCTAT
TTAGGTGACGCGTTAGAATACTCAAGCTATGCATCAAGCTTGGTACCGAGCTCGGATCCA
CTAGTAACGGCCCGCAGTGTGCTGGAATTCGCCCTTGGCCGCAATAAAATATCTTTATTT
TCATTACATCTGTGTGTTGGTITTTTTGTGTGAATCGATAGTACTAACATACGCTCTCCAT
CAAAACAAAACGAAACAAAACAACTAGCAAAATAGGCTGTCCCCAGTGCAAGTGCAGGT
GCCAGAACATTTCTCTATCGATAGGTACCGAGCTCTTACGCGTGCTAGCCCTCGAGCAGG
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ATCAATATTGGCTATTGGCCATTGCATACGTTGTATCTATATCATAATATGTACATTTAT
ATTGGCTCATGTCCAATATGACCGCCATGTTGACATTGATTATTGACTAGTTATTAAATAG
TAATCAATTACGGGGTCATTAGTTCATAGCCCATATATGGAGTTCGCGGTTACATAACTT
ACGGTAAATGGCCCGCCTGGCTGACCGCCCAACGACCCCCGCCCATTGACGTCAATAATG
ACGTATGTTCCCATAGTAACGCCAATAGGGACTTTCATTGACGTCAATGGGTGGAGTAT
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ATTGACGTCAATGACGGTAAATGGCCCGCTGGCATTATGCCCAGTACATGACCTTACGG
GACTTTCTACTTGGCAGTACATCTACGTATTAGTCATCGCTATTACCATGGTGATCGCG
TTTTGGCAGTACATCAATGGGCGTGGATAGCGTTTGACTCACGGGGATTTCCAAGTCTC
CACCCATTGACGTCAATGGGAGTTTGTTTTTGGCACAAAATCAACGGGACTTTCCAAAA
TGTCGTAACAACCTCCGCCCCATTGACGCAAATGGGCGGTAGGCGTGTACGGTGGGAGGTC
TATATAAGCAGAGCTCGTTTAGTGAACCGTCAGATCGCCTGGAGACGCCATCCACGCTGT
TTTGACCTCCATAGAAGACACCGGGACCGATCCAGCCTCCCCTCGAAGCTCGACTCTAGG
GGCTCGAGATCTGCGATCTAAGTAAGCTTGCATGCCTGCAGGTCCGCCGCCACGACCGGT
GCCGCCACCATCCCCTGACCCACGCCCCCTGACCCCTCACAAGGAGACGACCTTCCATGAC
CGAGTACAAGCCACGGTGCGCCTCGCCACCCGCGACGACGTCCCCCGGGCCGTACGCAC
CCTCGCGCGCGGTTCCGCGACTACCCCGCCACGCGCCACACCGTCGACCCGGACCGCCA
CATCGAGCGGGTCACCGAGCTGCAAGAACTCTTCTCACGCGCGTCCGGCTCGACATCGG
CAAGGTGTGGGTCCGCGACGACGCGCGCGGTGGCGGTCTGGACCACGCCGGAGAGCGT
CGAAGCGGGGGCGGTGTTCCGCGAGATCGGCCCGCGCATGGCCGAGTTGAGCGGTTCCCG
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CGTCGTGCTCCCCGAGTGGAGGCGGCGGAGCGCGCGGGGTGCCCGCTCTCTGGAGAC
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CCGACCCGGGCGGCCCCGCGACCCCGCACCCGCCCCCGAGGCCACCGACTCTAGAGTC
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ATAGCGAAGAGGCGCCGACCGATCGCCCTTCCCAACAGTTGCGCAGCCTATACGTACGGC
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GTGATATTATTGACACGCCGGGGCGACGGATGGTGATCCCCCTGGCCAGTGACGCTCTGC

TGT CAGATAAAGTCTCCCGTGAACCTTACCCGGTGGTGCATATCGGGGATGAAAGCTGGC
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 AAATGT CAGGCATGAGATTATCAAAAAAGGATCTTCACCTAGATCCTTTTCACGTAGAAAAG
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 GGGAAAAACGCAAGCGCAAAGAGAAAGCAGGTAGCTTGACAGTGGGCTTACATGGCGATAGC
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 GGCGCAGGGGATCAAGCTCTGATCAAGAGACAGGATGAGGATCGTTTCGCATGATTGAAC
 AAGATGGATTGCACGCAGGTTCTCCGGCCGCTTGGGTGGAGAGGCTATTTCGGCTATGACT
 GGGCACAACAGACAATCGGCTGCTCTGATGCCGCCGTGTTCCGGCTGT CAGCGCAGGGGC
 GCCCGGTTCTTTTGTCAAGACCGACCTGTCCGGTGCCCTGAATGAACTGCAAGACGAGG
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 CATCTCACCTTGCTCCTGCCGAGAAAGTATCCATCATGGCTGATGCAATGCCGCGGCTGC
 ATACGCTTGATCCGGCTACCTGCCCATTGACCAACGCGAAACATCGCATCGAGCGAG
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 GGCTCGCGCCAGCCGAATGTTCCGCCAGGCTCAAGGCGAGCATGCCCGACGGCGAGGATC
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 CTACCCGTGATATTGCTGAAGAGCTTGGCGGCGAATGGGCTGACCGCTTCCTCGTGCTTT
 ACGGTATCGCCGCTCCCGATTGCGAGCGCATCGCCTTCTATCGCCTTCTTGACGAGTTCT
 TCTGAATTATTAAACGCTTACAATTTCTGATGCGGTATTTTCTCCTTACGCATCTGTGCG
 GTATTTTCAACCGCATA CAGGTGGCACTTTTCGGGAAATGTGCGCGGAACCCCTATTTG
 TTTATTTTCTAAATACATTCAAATATGTATCCGCTCATGAGACAATAACCTGATAAAT
 GCTTCAATAATAGCACGTGAGGAGGGCCACCATGGCCAAGTTGACCACTGCCGTTCGGT
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 CCGGACTTCTGAGGAGACGACTTCCGCCGTTGGTCCGGGACGACGTGACCTGTTCAT
 CAGCGCGGTCCAGGACCAGGTGGTGCCGACAACACCTGGCCTGGGTGTGGGTGCGCGG
 CCTGGACGAGCTGTACGCCGAGTGGTCCGAGGTGCTGTCCAGAACTTCCGGGACGCCCTC
 CGGGCCGGCCATGACCGAGATCGGCGAGCAGCCGTGGGGGCGGGAGTTGCGCCTGCGCGA
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 ACCAGCGGTGGTTTGTGTCGGGATCAAGAGCTACCAACTCTTTTCCGAAGGTAACCTGG
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 CTTCAAGAACTCTGTAGCACCGCCTACATACCTCGCTCTGCTAATCCTGTTACCAGTGGC
 TGCTGCCAGTGGCGATAAGTCTGTCTTACCGGTTGGACTCAAGACGATAGTTACCGGA
 TAAGGCGCAGCGGTGCGGCTGAACGGGGGTTCTGTCACACAGCCCAGCTTGGAGCGAAC
 GACCTACACCGAACTGAGATACCTACAGCGTGAGCTATGAGAAAGCGCCACGCTTCCCGA
 AGGGAGAAAGGCGGACAGGTATCCGGTAAGCGGCAGGGTCGGAACAGGAGAGCGCACGAG
 GGAGCTTCCAGGGGAAACGCCCTGGTATCTTTATAGTCTGTGCGGTTTTCGCCACCTCTG
 ACTTGAGCGTCGATTTTTGTGATGCTCGTCAGGGGGGCGGAGCCTATGAAAAACGCCAG
 CAACGCGGCCCTTTTACGGTTCTTGGGCTTTTGTGCTGGCCTTTTGCTCACATGTTCTTTCC
 TGCGTTATCCCTGATTCTGTGGATAACCGTATTACCGCCTTTGAGTGAGCTGATACCGC
 TCGCCG CAGCCGAACGACCGAGCGCAGCGAGTCAGTGAGCGAGGAAGCGGAAG

FIG. 18

SEQ ID NO: 11

GACTAGTACTGACGGACACACCGAAGCCCCGGCGGCAACCCTCAGCGGATGCCCCGGGGCTT
CACGTTTTCCCAGGTCAGAAGCGGTTTTCGGGAGTAGTGCCCCAACTGGGGTAACCTTTGAG
TTCTCTCAGTTGGGGGCGTAGGGTCGCCGACATGACACAAGGGGTTGTGACCGGGGTGGACA
CGTACGCGGGTGCTTACGACCGTCAGTCGCGCGAGCGCGACTAGTACA

Fig. 19

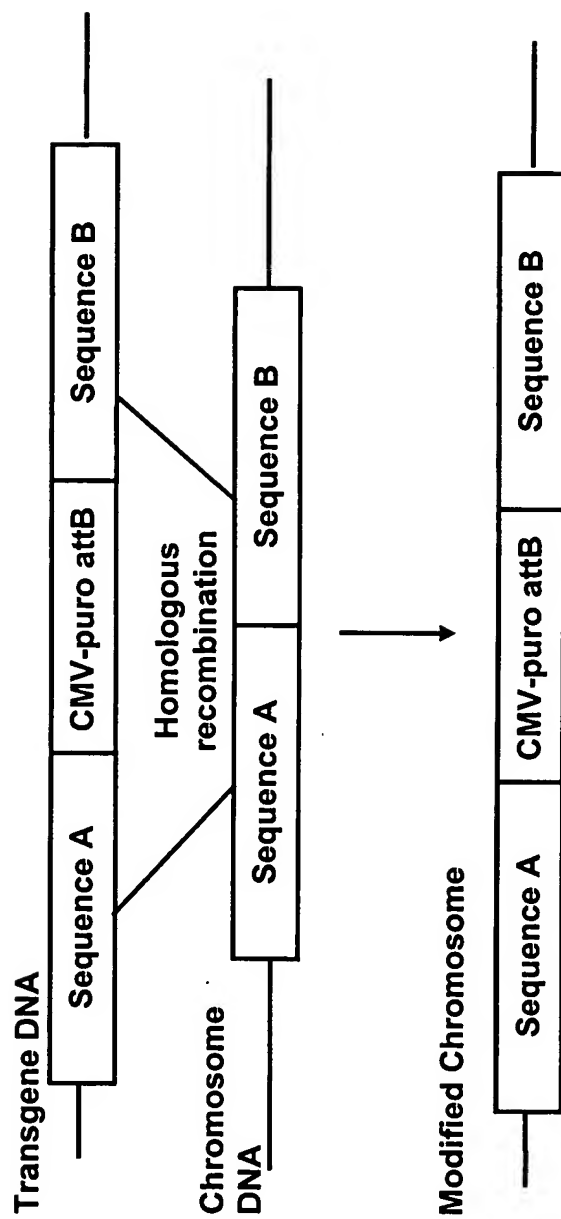


Fig. 20

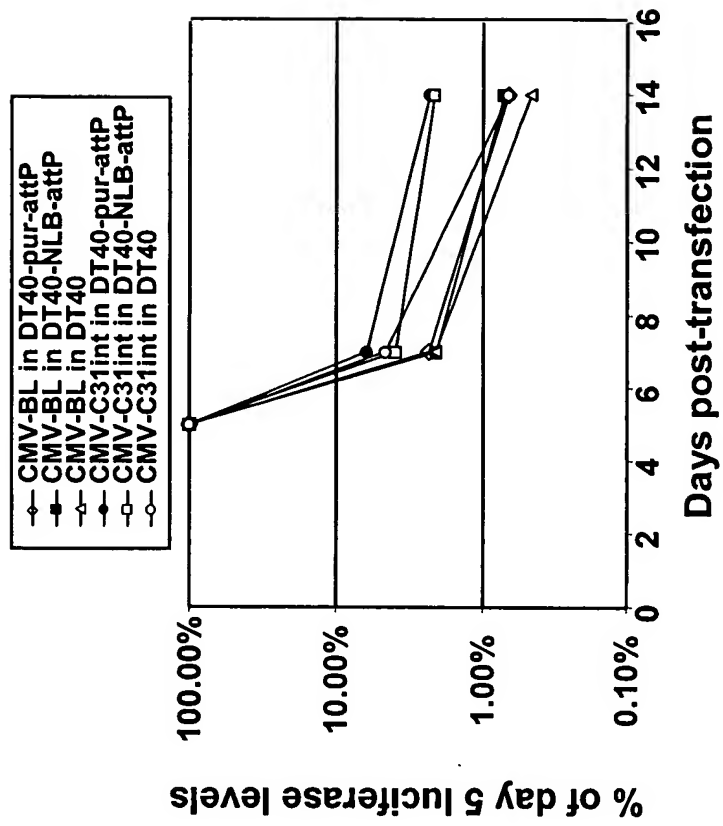


Fig. 21

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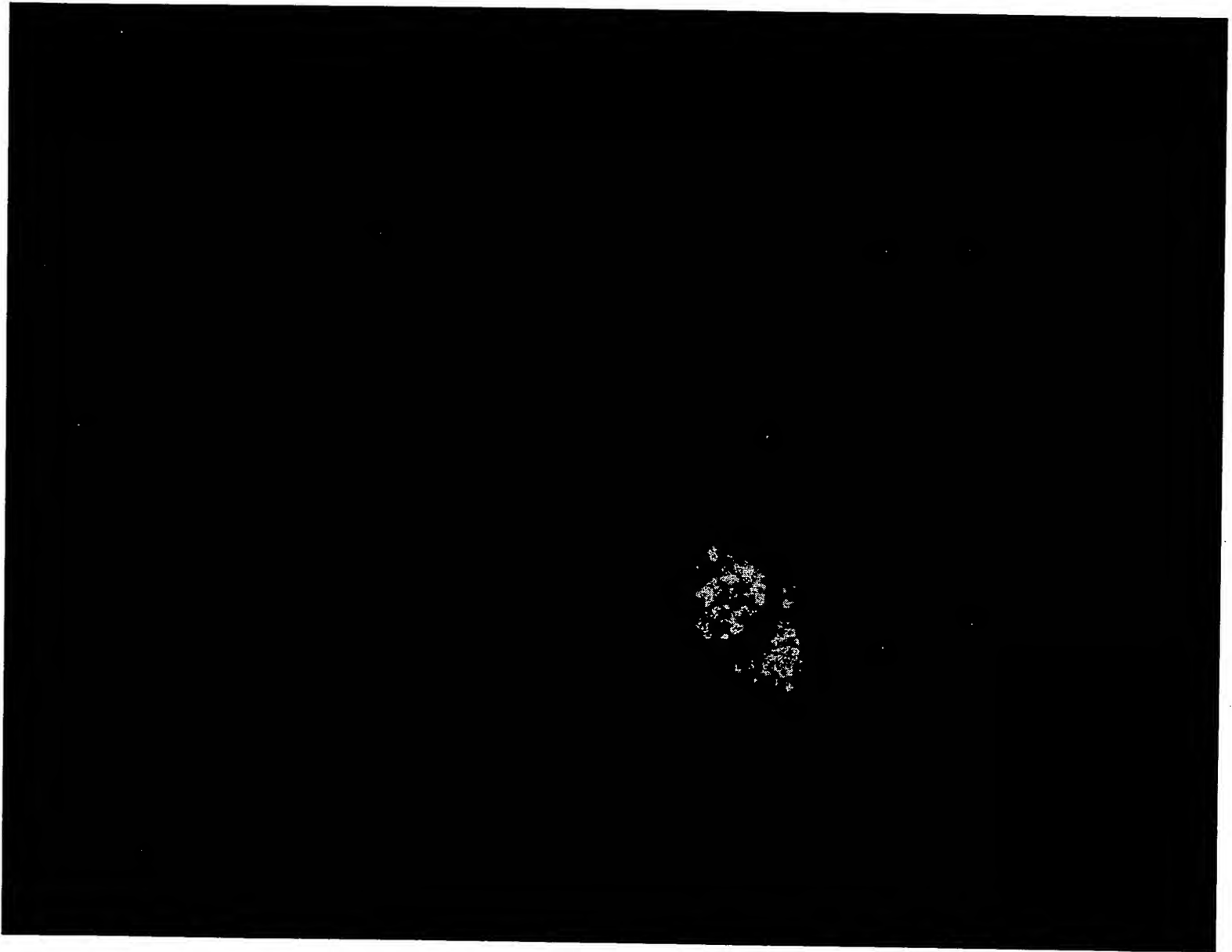


Fig. 22

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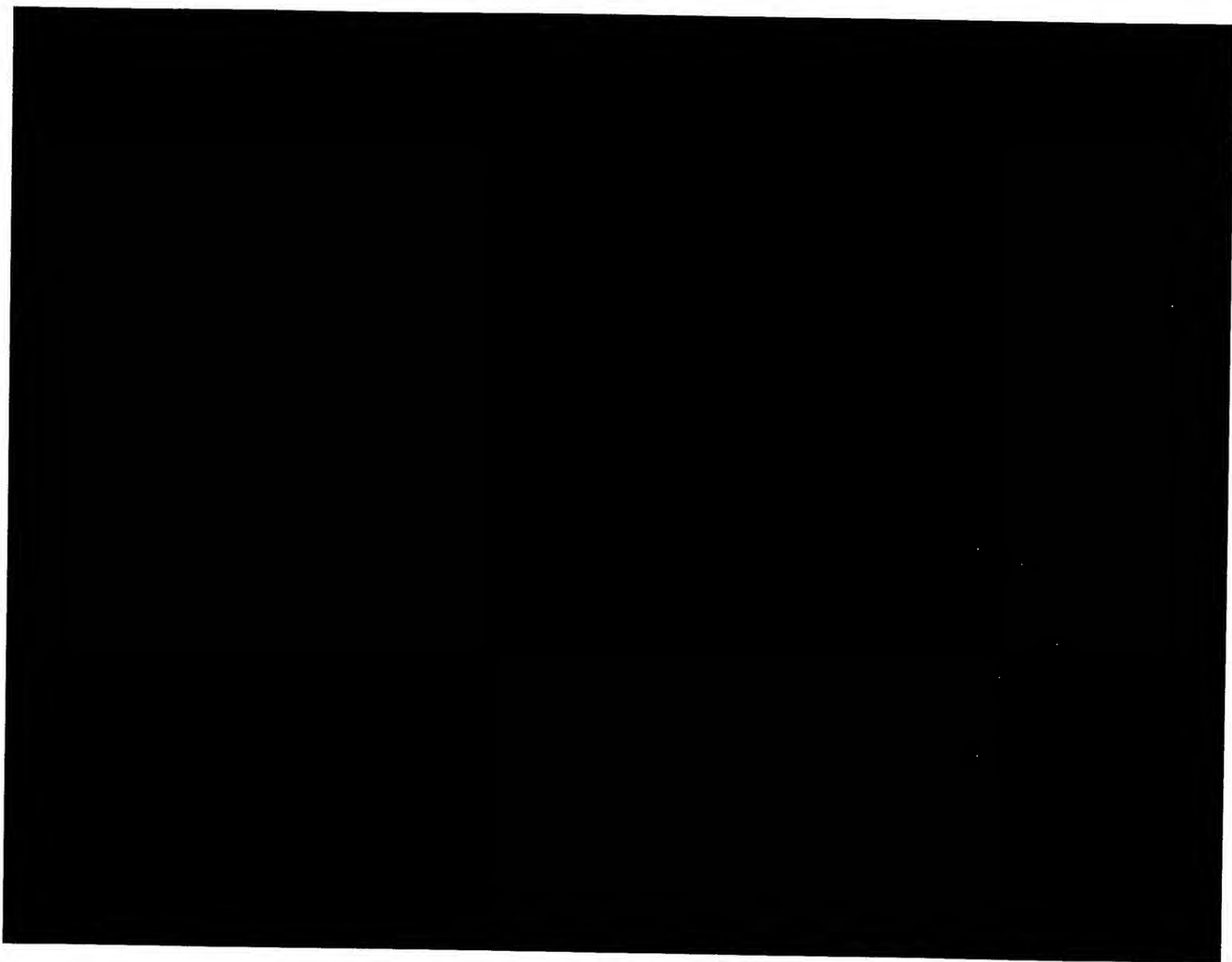


Fig. 23

BEST AVAILABLE COPY

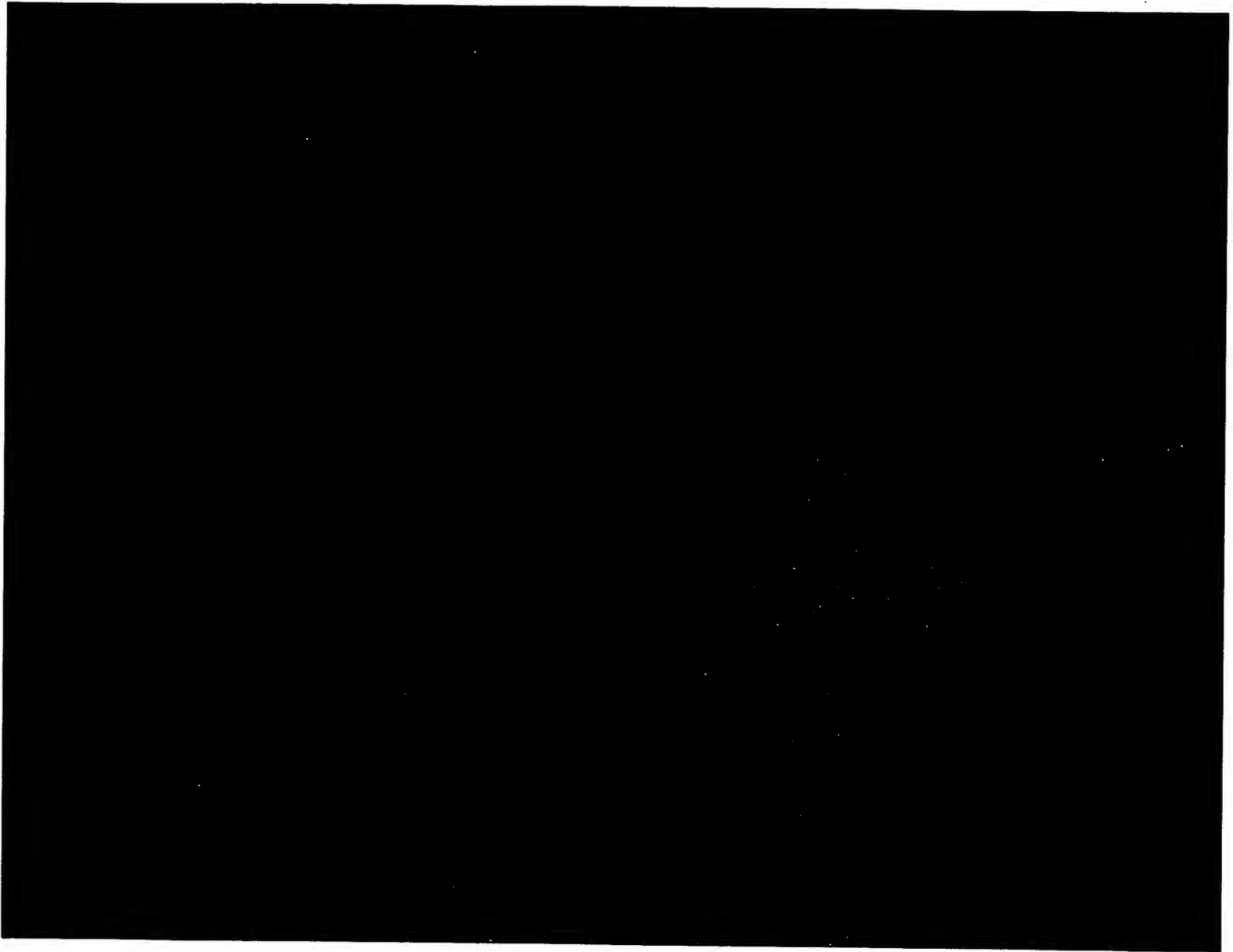


Fig. 24